

KNN2/KNN (Q9L10)

63% (12/19)

- ✗ 1. KNN is
- ☐ A data-driven method
 - ☒ B model-driven method
 - ☐ C I do not know
- ✓ 2. The dependent variable of the classification is
- ☒ A categorical
 - ☐ B numeric
 - ☐ C I do not know
- ✓ 3. KNN can be used for regression
- ☒ A Yes
 - ☐ B No
 - ☐ C I do not know
- ✓ 4. In the case of KNN classification we use
- ☐ A average of outcomes
 - ☒ B majority voting scheme
 - ☐ C I do not know
- ✓ 5. Which of these errors will increase constantly by increasing k?
- ☒ A train error
 - ☐ B test error
 - ☐ C both
 - ☐ D I do not know
- ✓ 6. This function can be used to perform KNN classification in R
- ☒ A knn()
 - ☐ B k_nn()
 - ☐ C knnreg()
 - ☐ D knearneib()
 - ☐ E I do not know

✗ 7. With the increase of k , the decision boundary will be

- ☐ A simplified
- ☒ B more complex
- ☐ C I do not know
- ☐ D unchanged

✓ 8. KNN algorithm is sensitive to outliers

- ☒ A True
- ☐ B False
- ☐ C I do not know

✓ 9. KNN

- ☒ A is a supervised learning algorithm.
- ☐ B is an unsupervised learning algorithm.
- ☐ C I do not know

✓ 10. In the case of small k we have

- ☒ A overfitting
- ☐ B underfitting
- ☐ C it depends on the situation
- ☐ D I do not know

✗ 11. Why do we need scaling in KNN?

- ☒ A to avoid overfitting
- ☐ B to avoid underfitting
- ☐ C to have "equal" weights for variables
- ☐ D I do not know

✗ 12. Let $k = n$, (n - number of observations), K-NN is same as

- ☐ A random guessing
- ☐ B everything will be classified as the most probable class (in total)
- ☒ C everything will be classified as the least probable class (in total)
- ☐ D I do not know

- ✓ 13. This function can be used to perform K-NN regression in R
- ☒ A knn.reg
 - ☐ B knnforreg
 - ☐ C regknn
 - ☐ D knnforregression
 - ☐ E I do not know
- ✓ 14. Do you need to worry about scaling with one explanatory variable?
- ☒ A No
 - ☐ B Yes
 - ☐ C I do not know

- ✓ 15. n - the number of observation,
 m - the number of explanatory variables

When $n=k$, $m=1$, the decision boundary for regression is

- ☒ A a line
- ☐ B a stepwise constant function
- ☐ C a stepwise quadratic function
- ☐ D I do not know

- ✗ 16. Which of these algorithms can be used to fill the missing values

- ☐ A KNN for regression
- ☒ B KNN for classification
- ☐ C both
- ☐ D I do not know

- ✓ 17. Which one is better: KNN regression or Linear regression?

- ☐ A KNN outperform LR if the parametric form that has been selected is close to the true form of f
- ☒ B LR outperform KNN if the parametric form that has been selected is close to the true form of f
- ☐ C KNN will always outperform the LR
- ☐ D I do not know

✗ 18. Which one is the Disadvantage of KNN?

- ☐ A required assumptions
- ☐ B cannot be applied for regression
- ☒ C difficult to perform
- ☐ D the problem of high dimensional data
- ☐ E I do not know

✗ 19. The best k for train set equals to

- ☐ A 1
- ☐ B 2
- ☒ C 0
- ☐ D I do not know

⊘ 20. What is the Parzen window
Kernel